

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-9. (canceled)

10. (currently amended) An information recording apparatus comprising:

a recording device for recording record information onto an information recording medium comprising: a first recording layer and a second recording layer in each of which the record information can be recorded, wherein the first recording layer includes a lead-in area, a first data area and a first middle area from an inner circumferential side to an outer circumferential side in this order and the second recording layer includes a lead-out area, a second data area and a second middle area from the inner circumferential side to the outer circumferential side in this order and including one lead in area and one lead out area; and

a first controlling device for controlling said recording device (i) to record the record information over the first and the second data areas by a unit of each of a plurality of block areas, each of which includes a first partial recording area of said first recording layer and a second partial recording area of said second recording layer located in a position facing

the first partial recording area of said first recording layer, in recording area between the lead-in area and the lead-out area, and (ii) to set an interlayer buffer area adjacent to an end of the first partial recording area of at least one of the plurality of block areas by recording buffer data for buffering a change operation of changing a recording layer which is a recording target, into each of said first recording layer and said second recording layer, when the recording layer is changed from said first recording layer to said second recording layer, (iii) to set a second interlayer buffer area adjacent to an end of the second partial recording area of at least one of the plurality of block areas by recording buffer data, when the recording layer is changed from said first recording layer to said second recording layer, (iv) to set a border-in area adjacent to a head of the first partial recording area of at least one of the plurality of block areas by recording management information data for managing the record information which is recorded into the at least one of the plurality of block areas, and (v) to set a border-out area adjacent to a head of the second partial recording area of at least one of the plurality of block areas by recording the management information.

11. (cancelled)

12. (canceled)

13. (withdrawn) The information recording apparatus according to claim 10, further comprising: an ejection judging device for judging whether or not said information recording medium is ejected from said information recording apparatus,

    said first controlling device controlling said recording device to provide the interlayer buffer area if it is judged by said ejection judging device that said information recording medium is ejected.

14. (withdrawn) The information recording apparatus according to claim 10, further comprising: an ejection judging device for judging whether or not said information recording medium is ejected from said information recording apparatus,

    said first controlling device controlling said recording device to provide at least one of the plurality of block areas with the interlayer buffer area having a smaller size than a predetermined size of the interlayer buffer area, if the record information is recorded over said first recording layer and said second recording layer,

    said first controlling device controlling said recording device to provide the interlayer buffer area having the predetermined size, by recording the buffer data into an area following the interlayer buffer area having the smaller size, if it is judged by said ejection judging device that said information recording medium is ejected.

15. (withdrawn) The information recording apparatus according to claim 10, wherein

at least one of plurality of block areas is fixed-length,

said information recording apparatus further comprises a size judging device for judging whether or not a size of the record information to be recorded are larger than a size of the at least one block area, and

said first controlling device controls said recording device to divide and record the record information to be recorded, if it is judged by said size judging device that the size of the record information to be recorded are larger than the size of the at least one block area.

16. (withdrawn) The information recording apparatus according to claim 15, further comprising an ejection judging device for judging whether or not said information recording medium is ejected from said information recording apparatus, and

said first controlling device controls said recording device, if the record information is not recorded in at least one portion of the at least one fixed-length block area, to record dummy data into the at least one portion of the at least one fixed-length block area.

17. (withdrawn) The information recording apparatus according to claim 10, wherein

at least one of plurality of block areas is variable-length,

    said information recording apparatus further comprises a determining device for determining a size of the at least one variable-length block area, on the basis of a size of the record information to be recorded, and

    said first controlling device controls said recording device to record the record information to be recorded into the at least one variable-length block area having the size determined by said determining device.

18. (withdrawn) The information recording apparatus according to claim 10, wherein

    the plurality of block areas include at least one fixed-length block area and at least one variable-length block area,

    said information recording apparatus further comprises a measuring device for measuring a size of the record information to be recorded, and

said first controlling device controls said recording device to record the record information into the at least one variable-length block area if the size of the record information to be recorded measured by said measuring device is equal to or larger than a predetermined size, and said first controlling device controls said recording device to record the record information into the at least one fixed-length block area if the size measured by said measuring device is smaller than the predetermined size.

19. (withdrawn) The information recording apparatus according to claim 10, wherein

    said information recording medium has a pre-record address continuously given in said first recording layer and said second recording layer, the pre-record address determining a position where the record information is recorded on said information recording medium, and

    said information recording apparatus further comprises an address giving device for giving a physical address recorded with the record information onto said information recording medium, so as to be continuous in each of the plurality of block areas.

20. (original) The information recording apparatus according to claim 10, wherein

said information recording medium has a pre-record address continuously given in said first recording layer and said second recording layer, the pre-record address determining a position where the record information is recorded on said information recording medium, and

    said information recording apparatus further comprises an address giving device for giving a physical address recorded with the record information onto said information recording medium, so as to be proportional to the pre-record address.

21. (original) The information recording apparatus according to claim 10, wherein

    said information recording medium has a pre-record address continuously given in said first recording layer and said second recording layer, the pre-record address determining a position where the record information is recorded on said information recording medium, and

    said information recording apparatus further comprises a second controlling device for controlling said recording device, to record discontinuity point information which indicates a discontinuity point of a relationship between a logical address, used when at least one of recording and reproduction of the record information is performed in each of the plurality of block areas, and a physical address recorded with the record information onto said information recording medium, into a management information area to record therein management

information for managing the record information, and to record at least one of the record information and reproduction control information for controlling reproduction of the record information such that the logical address is continuous in each of the plurality of block areas.

22. (currently amended) The information recording apparatus according to claim 10, wherein

    said information recording medium has a pre-record address continuously given in said first recording layer and said second recording layer, the pre-record address determining a position where the record information is recorded on said information recording medium, and has discontinuity point information recorded in advance, the discontinuity point information indicating a discontinuity point of a relationship between a logical address, used when at least one of recording and reproduction of the record information is performed in each of the plurality of block areas, and a physical address recorded with the record information onto said information recording medium, and

    said information recording apparatus further comprises a third logical address controlling device for controlling said recording device to record at least one of the record information and reproduction control information for controlling reproduction of the record information by using the logical address having a

fixed relationship with the physical address which is proportional to the pre-record address.

23. (withdrawn) The information recording apparatus according to claim 10, wherein

    said information recording medium has a pre-record address continuously given in each of the plurality of block areas, the pre-record address determining a position where the record information is recorded on said information recording medium, and

    said information recording apparatus further comprises a fourth controlling device for controlling said recording device to record at least one of the record information and reproduction control information for controlling reproduction of the record information such that a logical address used when at least one of recording and reproduction of the record information is performed is continuous in each of the plurality of block areas.

24. (withdrawn) The information recording apparatus according to claim 10, wherein

    said information recording medium has a pre-record address continuously given in each of the plurality of block areas, the pre-record address determining a position where the record information is recorded on said information recording medium, and

said information recording apparatus further comprises a fifth controlling device for controlling said recording device, to record at least one of the record information and reproduction control information for controlling reproduction of the record information such that a logical address used when at least one of recording and reproduction of the record information is performed is proportional to the pre-record address.

25-26. (canceled)

27. (withdrawn) The information recording apparatus according to claim 19, wherein the pre-record address of said first recording layer and the pre-record address of said second recording layer in a same radial position have a complement number relationship with each other.